

Methods

Procedure

The survey is designed to assess practices found in NCDFR's BMP manual that were developed to play an integral role in conserving soil and protecting water quality during timber harvesting operations. A copy of the survey procedure and the survey is located in Appendix 3. The survey also contained some conditions that are currently proposed in the ongoing BMP manual revision. The survey documented both commonly practiced BMPs and innovative BMPs that achieved the same goal. Survey questions were answered with a "Yes" response if a BMP condition was correctly implemented and a "No" response for failure or improper BMP implementation. Non-applicable practices and conditions received a "N/A" response. Conditions that posed a threat or risk to water quality prior to the tract naturally healing over time recorded a "Yes" response. The surveyors considered the following six factors before making a "Yes" response:

1. Sediment was delivered to stream/waterbody;
2. Sediment was likely to be delivered to stream/waterbody during a rainfall event (≤ 1 " over 24 hours);
3. Sediment was delivered to stream/waterbody via wind gusts;
4. Adverse stream/waterbody temperatures were a result of harvest;
5. Logging debris and/or other logging byproducts were left in stream/waterbody;
6. Chemical or petroleum products had a high potential to reach stream/waterbody.

A threat or risk was interpreted to mean either a severe or potentially severe water quality problem. A "No" response under the threats or risks to water quality was selected if the condition(s) posed no threat to water quality. Standardized site selection criteria, survey instructions and supplemental training, and quality assurance/quality control methods were employed to ensure consistent and accurate data were collected and recorded.

Survey Implementation

1. Intended Sampling Method

The survey was only conducted on "active" harvest sites equal to or greater than five acres in size. "Active" was defined to be the ongoing operation of tree felling or transport/loading of equipment at the time the survey was conducted. Active also included pre-harvest activities such as forest road, access road, and skid trail construction and post-harvest site rehabilitation efforts. The sites had either intermittent or perennial streams and/or waterbodies located within the "cut zone" or within 50 feet of the harvest operation boundaries. The original procedure required a non-stratified site selection from the air and/or ground using the DeLorme *North Carolina Atlas and Gazetteer, Topo Maps of the Entire State* (Third Edition, 1997). Using this atlas, the surveyor selected a district-applicable map grid-number or atlas page and followed steps listed below to find sites to evaluate:

- The atlas page was randomly sub-sampled for five different quadrants. Each quadrant was approximately 25 square miles in area.
- The five quadrants were then sub-sampled by numbering each quadrant on the grid or page that was applicable to the district and randomly selecting the numbers.